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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/090,119	02/28/2002	Eric T. Bovell	3336.1004-000	3603

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HAMILTON, BROOK, SMITH & REYNOLDS, P.C.
530 VIRGINIA ROAD
P.O. BOX 9133
CONCORD, MA 01742-9133

EXAMINER

VU, PHUONG T

ART UNIT

PAPER NUMBER

2841

DATE MAILED: 07/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/090,119

Applicant(s)

BOVELL, ERIC T.

Examiner

Phuong T. Vu

Art Unit

2841

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 17-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The scope of claim 17 is unclear regarding the presence of the tray.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sherry (US 5,757,617) over Wakita (US 5,488,538). Regarding claim 1, the Sherry reference discloses a sled module for a mass storage device comprising a housing 80, a circuit board 72 mounted to a portion of the housing, the circuit board having an end mounted signal connector 68, a mass storage device 60 having an enclosure and a signal connector 62. The reference does not teach providing spacers to accommodate different sized mass storage devices, however, Wakita teaches that it is known to provide spacers 20,30 for positioning a mass storage device 1 within a housing 12, the spacers thus permitting the housing to adapt to mass storage devices with different

configurations and signal connectors with different positional configurations. It would have been obvious to those skilled in the art at the time the invention was made to modify the sled module of Sherry to provide spacers as taught by Wakita to allow the sled module to accommodate mass storage devices with different configurations and signal connectors with different positional configurations to expand the functionality of the sled module without incurring the production cost of having to redesign and remake the sled module for each variation of mass storage devices. In such a configuration, the spacers would position the mass storage device within the housing at a position juxtaposed with respect to the circuit board such that the signal connectors on the circuit board and the mass storage device are necessarily aligned and mating with one another as shown in the Sherry reference to operate as intended.

Regarding claim 2, the Sherry reference teaches providing a cover 88. It would have been obvious to those skilled in the art at the time the invention was made that a hole may be provided allowing the mass storage device to protrude through the cover for easy access to the mass storage device.

Regarding claim 3, both references show that the mass storage device has only one connector, however, it is known in the art to provide mass storage devices with a separate data interface port and a power supply port. Correspondingly, the circuit board would also then have a data interface connector and a power supply connector. The examiner takes Official Notice.

Regarding claim 4, the spacers position the mass storage device so that its connector mates with the connector of the circuit board. If separate connectors were

provided as recited in claim 3, the spacers would necessarily position the mass storage device so that the data interface and power supply ports of the mass storage device mate with the corresponding connectors of the circuit board.

Regarding claim 5, both references show that the mass storage device is a hard disk drive.

Regarding claim 6, those skilled in the art would recognize that the above mentioned sled module may accommodate a CD-ROM drive, DVD drive or digital tape drive to further expand its functionality.

Regarding claims 7-8, the reference is silent regarding the material composition of the spacers. However, it would have been obvious that the spacers may be formed from plastic or rubber.

Regarding claims 9-10, it would have been obvious to those skilled in the art at the time the invention was made that the spacers may be made of a flexible, compressible material to provide shock absorption.

Regarding method claims 11-16, one would necessarily perform the recited steps in inserting the mass storage device in the sled module rejected above.

Regarding claim 17, Sherry shows a sled module adapted to be fit into a tray 80 comprising a circuit board 72 mounted within the sled module in a rear position thereof, the circuit board providing a rear connector 74 for power and data signals to and from a backplane of the tray, and the circuit board also providing a front mounted connector 68 for storage device signals, a mass storage device 60, positioned in a front portion of the tray, the mass storage device having a rear mounted connector 62 for storage device

signals, the rear mounted connector located in a position on a rear face of the mass storage device, support rails 82 located in a front portion of the tray for mounting the mass storage device to the tray. Sherry does not teach providing any spacers to accommodate different mass storage devices with different connector positions, however Wakita teaches that it is known to provide spacers 20, 30 for positioning a mass storage device 1 within a housing 12. It would have been obvious to those skilled in the art at the time the invention was made to modify the sled module of Sherry to provide spacers as taught by Wakita to allow the sled module to accommodate mass storage devices with different configurations without incurring the inconvenience or production costs of having to redesign and remake the sled module for each variation of mass storage devices. In such a configuration, least one spacer would be disposed between a mass storage device and a support rail, the spacer having a thickness which would be chosen according to a position of the rear mounted connector on the mass storage device so that it can couple to a mating connector of the circuit board. The front connector on the circuit board would mate directly to the rear connector on the mass storage device and so that a different mass storage device having a rear mounted connector in a different position can be mounted in the same sled module by using a spacer with a different thickness.

Regarding claims 18-19, the storage device signals comprise data and power signals.

Response to Arguments

5. Applicant's arguments filed 5/29/03 have been fully considered.

Regarding the previous 35 U.S.C. 112 rejections stating that that it was unclear from the claim language if it was the "storage devices" or the "control signal connectors" that have different configurations, the rejection was made to address the ambiguity present in the claim language. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. Regarding the rejection which stated that there was "no basis in the specification to support a claim that the control signal connectors have different configurations", Applicant stated that this is the "very essence of Applicant's disclosure". While it is clear from the specification that the present invention is a sled module accommodating a mass storage drive which may have varying configurations, the language that the "control signal connectors have different configurations" appears to be misdescriptive as it is not the connectors themselves that have varying configurations, it is the storage devices that have different configurations/varying signal connector positions. It is noted that Applicant's claim amendments have overcome the 35 U.S.C. 112 rejection set forth in the previous rejection mailed 1/27/03.

The art rejection of the claims in view of Yeom has been withdrawn in view of Applicant's amendments to claims 1 and 11.

Regarding the rejection of the claims based on the Sherry and Wakita references, Applicant states that Sherry does not teach that drives with different connector (position) configurations can be accommodated in the same module. The examiner agrees with this statement. It is for this very reason that the secondary reference, Wakita was brought into the rejection. Applicant states that the spacers

shown in Wakita “serve an entirely different purpose than Applicant’s spacers” as they are used “to accommodate different width dimensions”. The examiner disagrees with both of these remarks. The spacers taught by Wakita are quite similar to Applicant’s recited spacers as both spacers are used in module assemblies to accommodate mass storage drives with varying sizes. When using the spacers as taught by Wakita to position the mass storage drive, it is required that the signal connector of the mass storage drive be aligned to an extent so that it would mate with a connector of a circuit board so that the mass storage drive and assembly could function as intended. If this connection could not be made when placing the mass storage drive in a certain position, it would be required that the spacers or additional spacers would be used to reposition the mass storage drive so that this connection could be attained to provide an operable hard drive and assembly. Regarding the second statement that the spacers shown in Wakita are merely used to accommodate varying mass storage drive width dimensions, it is noted that Wakita teaches that the spacers may be used accordingly to compensate for differences in height and lengths as well (column 5, lines 53-54).

Applicant further remarks that the configuration of Wakita would presumably require a ribbon cable. The claims do not obviate the presence of a ribbon cable.

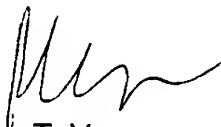
Finally, Applicant mentions that none of the references shows a “sled module”. It is the examiner’s position that the assembly disclosed in Yeom, Wakita and Sherry may all be considered sled modules as they provide trays 10, 12 and 80 respectively.

Art Unit: 2841

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong T. Vu whose telephone number is (703) 308-0303. The examiner can normally be reached on Mon. & Tues., 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (703) 308-3121. The fax phone number for the organization where this application or proceeding is assigned is (703) 746-4341.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.



Phuong T. Vu
Patent Examiner
June 29, 2003